

ever, on the directions of the ray and of the magnetic force. In this respect it differs essentially from the rotatory power naturally possessed by many bodies, such as quartz, sugar, oil of turpentine, &c., which exhibit the phenomena of circular polarization; for in some of these the rotation takes place to the right, and in others to the left. When, therefore, such substances are employed as diamagnetics, the natural and the superinduced powers tend to produce either the same or opposite rotations; and the resulting effects are modified according as they are cumulative in the former case, and differential in the latter.

In the concluding section of the paper, the author enters into general considerations on the nature of the newly-discovered influence of electricity and magnetism over light, and remarks that all these powers possess in common a duality of character which constitutes them a peculiar class, and affords an opening which before was wanting for the appliance of these powers to the investigation of this and other radiant agencies. The phenomena thus brought to light confirm the views entertained by the author relative to the constitution of matter as being spheres of power, for the operation of which the conception of a solid nucleus is not necessary; and leads to the presumption that the influence of magnetism on bodies which exhibit no magnetic properties consists in producing in them a state of electric tension tending to a current; while on iron, nickel, and other bodies susceptible of magnetism, currents are actually established by the same influence.

The author states that he is still engaged in the prosecution of these inquiries.

“On the Action of the Rays of the Spectrum on Vegetable Juices:” being an Extract from a Letter by Mrs. M. Somerville to Sir John F. W. Herschel, Bart., dated Rome, September 20, 1845. Communicated by Sir John F. W. Herschel, Bart., F.R.S.

In the experiments of which the results are here recorded, the solar spectrum was condensed by a lens of flint glass of seven inches and a half focus, maintained in the same part of the screen by keeping a pin-hole or pencil-mark constantly at the corner of the red rays, which were sharply defined by being viewed through blue spectacles; and the apparatus was covered with black cloth in order to exclude extraneous light. Thick white letter-paper, moistened with the liquid to be examined, was exposed wet to the spectrum, as it was found that the action of the coloured light was thus rendered more immediate and more intense, than when the surface of the paper was dry.

The action of the spectrum at the junction of the lavender with the violet rays was found in some cases to be different from what it is with either of these colours separately, indicating a break in the continuity of action, and suggesting the idea of a secondary spectrum. In many instances the yellow and green rays exert a powerful influence on vegetable substances, an influence apparently unconnected with heat; for the darkening is generally least under

the red rays and immediately below them, where the calorific rays are most abundant. The action, in a great number of cases, produces insulated spots in different parts of the spectrum, but more especially in the region of the rays of mean refrangibility, in which neither the calorific nor the chemical powers are the greatest. The point of maximum intensity is sometimes altered by the addition of acids, alkalies, or diluted alcohol. But altogether, as the author states, the action of the different parts of the spectrum seems to be very capricious, the changes of colour produced being exceedingly irregular and unaccountable.

December 1, 1845.

At the Anniversary Meeting,

The MARQUIS OF NORTHAMPTON, President, in the Chair.

Captain Smyth, on the part of the Auditors of the Treasurer's Accounts, reported, that the total receipts during the past year, inclusive of a balance of 1940*l.* 12*s.* 8*d.*, carried from the account of the preceding year, amounted to 5110*l.* 11*s.* 3*d.*; and that the total amount of payments in the same period amounted to 3033*l.* 19*s.* 5*d.*, leaving a balance in the hands of the Treasurer of 2076*l.* 11*s.* 10*d.*

The thanks of the Meeting were given to the Auditors for the trouble they have taken in examining the Treasurer's Accounts.

The Secretary then read the following lists of deceased Fellows of the Royal Society, and of those admitted into the Society since the last Anniversary in 1844.

List of Fellows of the Royal Society deceased since the last Anniversary (1844).

On the Home List.

David Francis Atcherley, Esq.	Rev. Henry Coddington.
George Basevi, Esq.	Very Rev. Edmund Goodenough,
George Henry Law, Lord Bishop of Bath and Wells.	Dean of Wells.
Rev. William Frederick Baylay.	William Heberden, M.D.
John Laurens Bicknell, Esq.	Thomas Phillips, Esq., R.A.
Samuel Bosanquet, Esq.	John Ramsbottom, Esq.
Right Hon. William Sturges Bourne.	Martin Tupper, Esq.
John Frederic Daniell, Esq., For. Secretary.	The Marquis of Westminster, K.G.
	Sir Isaac Wilson, Knt., M.D.

On the Foreign List.

Le Comte de Cassini.

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Théodore de Saussure.